

PRE-APPEAL BRIEF REQUEST FOR REVIEW		Docket Number: 05542-540001
	Application Number 10/773,868	Filed February 6, 2004
	First Named Inventor Mavliev et al.	
	Art Unit 1742	Examiner Harry D. Wilkins III

Applicant requests review of the final rejection in the above-identified application. No amendments are being filed with this request.

This request is being filed with a Notice of Appeal.

The review is requested for the reason(s) stated on the attached sheet(s).
 Note: No more than five (5) pages may be provided.

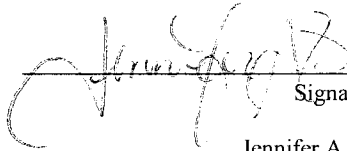
I am the

☐ applicant/inventor.

☐ assignee of record of the entire interest.
 See 37 CFR 3.71. Statement under 37 CFR 3.73(b) is enclosed. (Form PTO/SB/96)

☒ attorney or agent of record 54,563
 (Reg. No.)

☐ attorney or agent acting under 37 CFR 1.34.
 Registration number if acting under 37 CFR 1.34 _____



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 August 14, 2006
 Date

NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required. Submit multiple forms if more than one signature is required, see below.

☒ Total of 1 form is submitted.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant	: Mavliev et al.	Art Unit	: 1742
Serial No.	: 10/773,868	Examiner	: Harry D. Wilkins III
Filed	: February 6, 2004	Conf. No.	: 7212
Title	: ENDPOINT SYSTEM FOR ELECTRO-CHEMICAL MECHANICAL POLISHING		

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Commissioner for Patents
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Alexandria, VA 22313-1450

PRE-APPEAL BRIEF REQUEST FOR REVIEW
IN RESPONSE TO ADVISORY ACTION MAILED JUNE 27, 2006

This brief is in response to legal and factual deficiencies in the Final Office Action mailed February 14, 2006 and Advisory Action mailed June 27, 2006.

I. Introduction

Claims 16, 19-26, 29-30 and 75-78 were rejected as allegedly unpatentable over USP No. 6,482,307 to Ashjaee in view of US Pub No. 2002/0077031 to Johansson.

Claim 16 recites an electro-chemical mechanical polishing apparatus, including: 1) a rotatable platen to support a polishing pad; 2) a weir to contain an electrolyte on the polishing pad; 3) a carrier head to hold a substrate against the polishing pad; 4) a first electrode for contacting the polishing electrolyte on the polishing pad, **the first electrode** positioned on the platen and substantially spanning the platen and **having an aperture therethrough**; 5) a first electrical contact connected to the first electrode; 6) a second electrical contact for connection to second electrode for contacting the substrate in contact with the polishing pad; 7) a voltage source to apply a voltage between the first electrical contact and the second electrical contact; 8) a housing positioned partially in a cavity in the platen and having a portion extending above a top surface of the platen and **through the aperture in the first electrode**; and 9) an eddy current sensor secured to the platen in the housing, the eddy current sensor including a coil to generate a magnetic field to induce eddy currents in a metal layer in the substrate while the sensor is positioned adjacent the substrate.

II. Ashjaee and Johansson Do Not Teach An Electrode Having An Aperture Therethrough

In the Final Office Action dated February 14, 2006 and Advisory Action dated June 27, 2006, the Examiner interprets the anode plate 9 of Ashjaee as the claimed first electrode, and the cathode plate 30 as the claimed second electrode. The Examiner acknowledged that the anode plate 9 of Ashjaee does not have an aperture therethrough. To cure this deficiency, the Examiner relies upon Johansson, citing col. 4, lines 40-65 (equivalent of ¶ 0033), and provides the following argument with respect to the combination:

..... if the polishing pad (or any material positioned between the eddy current sensor and the substrate) is not sufficiently thin or non-magnetic, an aperture is required to allow the proper sensing function [of the eddy current monitoring system 40] to occur. Therefore, it would have been obvious to one of ordinary skill in the art to have placed an aperture in the first electrode of Ashjaee et al for placement of the eddy current sensor of Johansson et al because the electrode material [of Ashjaee] would have interfered with the operation of the eddy current sensor (see, page 3, lines 17-21 of Final Office Action).

Applicant respectfully disagrees.

Johansson shows modifying the polishing pad 32, and does not show modifying an electrode or electrode plate. Also, Johansson shows forming a recess in the bottom surface of the polishing pad 32, and does not show making an aperture through the polishing pad 32.

Further, it appears that the Examiner's argument includes two steps. First, the Examiner takes from Johansson the general proposition that conductive or magnetic material positioned between the eddy current sensor and the substrate interferes with the operation of the eddy current sensor. Second, from this proposition, the Examiner reasons that it would be obvious to place an aperture in Ashjaee's electrode.

Even assuming *arguendo* that Johansson teaches the general proposition that conductive or magnetic material positioned between the eddy current sensor and the substrate interferes with the operation of the eddy current sensor, Applicant submits that the second step of the Examiner's reasoning is improper. The Examiner emphasizes that the combination of Ashjaee and Johansson would not be functional (because the electrode material would have interfered with the operation of the eddy current sensor) without further modification. However, rather than making the placement of aperture obvious, this fact actually teaches away from the

combination in the first place. That is, a person of ordinary skill would be disinclined to place the eddy current sensor as disclosed in Johansson in the platen because the electrode material of Ashjaee would have interfered with the operation of the eddy current sensor.

Moreover, the prior art teaches various ways that the system of Ashjaee could be configured without an aperture so that the electrode material would not interfere with the operation of an eddy current sensor. For example, one could position the eddy current sensor in the carrier head (e.g., as shown by claim 1 and Fig. 4 of U.S. Patent No. 5,660,672 to Li), or remove the anode plate entirely and place it in the weir (e.g., as shown by WO Pub No. 02/085570 to Chen in which the electrode 204, which acts as an anode, is placed in the basin 210.) These techniques would still allow an eddy current sensor to be incorporated into the system of Ashjaee without a need for an aperture.

In sum, Applicant respectfully submits that if one were to add an eddy current sensor to the system of Ashjaee, rather than modifying Ashjaee using a technique that is not taught by Johansson, one would modify Ashjaee using a technique that is taught by other references. Consequently, it is clear that the Examiner's proposed combination is based on improper hindsight reasoning, utilizing Applicant's claims as a guide to pick and choose the selected elements from various prior art in an attempt to reconstruct Applicant's claimed invention.

B. The Proposed Combination Does Not Disclose A Housing Positioned Partially In A Cavity In The Platen

Claim 16 further recites a housing positioned partially in a cavity in the platen and having a portion extending above a top surface of the platen and through an aperture in a first electrode.

As discussed *supra*, the proposed combination of Ashjaee and Johansson does not disclose an electrode having an aperture therethrough. Inevitably, this proposed combination also does not teach a housing through such an aperture in the electrode.

Further, in the Final Office Action, the Examiner acknowledged that Ashjaee does not disclose a housing positioned partially in a cavity in the platen, but asserted that the foregoing claimed feature is shown in Figs. 4B and 4C of Johansson (page 3, lines 10-12). In the Advisory Action mailed June 27, 2006, the Examiner changed his position and asserted that Johansson, in

Fig. 2A, teaches "locating the sensor in a housing in the platen" (see, item (B) on page 2 of Advisory Action). Applicant respectfully disagrees.

Specifically, Applicant respectfully submits that neither Fig. 2A, Fig. 4B nor Fig. 4C of Johansson illustrate a housing having an eddy current sensor secured therein. Referring to Fig. 2A, Johansson discloses only an eddy current monitoring system 40 that includes a core 42 positioned in a recess 26 and having a sense coil 46 and a driving coil 44. Also, Figs. 4B and 4C of Johansson only illustrate the core 42 located in the recess 26 formed in the platen 24, where a portion of the core 42 extends through a gap 33 formed by the partial removal of the backing layer 34 and cover layer 32.

Clearly, Johansson does not disclose any housing. Absence a showing of this claimed feature, inevitably, Johansson also does not disclose that such a housing has a portion that specifically extends above a top surface of the platen (note that Figs. 4B and 4C of Johansson illustrate only a portion of the core that extends above the top surface of the platen 24).

For each of these reasons, the rejection of claim 16 should be withdrawn. The rejection of the other claims should be withdrawn either for including corresponding features or for depending from claims which do.

Please apply any charges or credits to deposit account 06-1050.

Respectfully submitted,

Date: August 14, 2006

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